

WHAT IS CLAIMED IS:

1. A Bluetooth-IP access system, comprising:

a Bluetooth-IP access device for searching and storing information regarding nearby access points including Bluetooth addresses;

5 a Bluetooth terminal for accessing the access points by receiving the information regarding nearby access points, or by searching and storing the information; and

a communication link for connecting said Bluetooth-IP access device and said Bluetooth terminal,

10 wherein mutual search is required by using said communication link, and Bluetooth addresses of nearby access points are provided by using said communication link.

2. The device as claimed in claim 1,

15 wherein said communication link is a Bluetooth ACL link.

3. The device as claimed in claim 1,

wherein said information regarding said nearby access points further includes clock_offset information.

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4. The device as claimed in claim 1,

wherein said Bluetooth-IP access device includes a search support module, and the search support module includes,

a database having Bluetooth address information and second to 16th

clock bit information among said clock_offset information of said nearby access points, and

a module calculating said clock_offset,

and selective search response of said clock_offset information is
5 performed in accordance with search request of said terminal.

5. The device as claimed in claim 1,

wherein said Bluetooth-IP access device includes a search support module, and the search support module includes,

10 a database having Bluetooth address information and second to 16th clock bit information among said clock_offset information of said nearby access points, and

a module calculating said clock_offset,

and selective search for the clock_offset information is requested to
15 the Bluetooth-IP access device.

6. The device as claimed in claim 1,

wherein a hardware of said Bluetooth-IP access device includes,

a main operation means in charge of operation within said Bluetooth-
20 IP access device;

a register setting means for setting the hardware state within said Bluetooth-IP access device through said main operation means;

a static data storage for storing data and program module needed for booting said Bluetooth-IP access device and read by said main operation

means;

a HCI communication means for bi-directional communication between said main operation means and a plurality of Bluetooth-IP access devices;

5 a first electrical connection means for electrically connecting said HCI communication means and said main operation means; and

a second electrical connection means for electrically connection said HCI communication means and said Bluetooth-IP access device.

10 7. The device as claimed in claim 1,

wherein a software of said Bluetooth-IP access device includes,

a boot loader for performing hardware initialization when the hardware is reset, performing specific program, and supplying information of said specific program;

15 an operating system operated by using said program information supplied from said boot loader;

an initialization script for automatically initializing and driving desired software and hardware module by said operating system;

a software of HCI communication device for controlling said HCI
20 communication device;

a Bluetooth HCI software and a Bluetooth protocol stack satisfied with at least specification 1.0B; and

a module for supporting fast search, having a database consisted of Bluetooth addresses of nearby access points, and an automation means needed

for fast search request/response.

8. The device as claimed in claim 1,

wherein a hardware of said Bluetooth terminal includes,

5 a main operation means in charge of operation within said terminal;

a register setting means for setting the hardware state within said Bluetooth-IP access device through said main operation means;

a static data storage for storing data and program module needed for booting said Bluetooth-IP access device and read by said main operation
10 means;

a dynamic data storage for storing data and program module needed for operating said Bluetooth-IP access device and read and written by said main operation means;

a HCI communication means for bi-directional communication
15 between said main operation means and a plurality of Bluetooth-IP access devices;

a first electrical connection means for electrically connecting said HCI communication means and said main operation means; and

a second electrical connection means for electrically connection said
20 HCI communication means and said Bluetooth-IP access device.

9. The device as claimed in claim 1,

wherein a software of said Bluetooth terminal includes,

a boot loader for performing hardware initialization when the

hardware is reset, performing specific program, and supplying information of said specific program;

an operating system operated by using said specific program information supplied from said boot loader;

5 an initialization script for automatically initializing and driving desired software and hardware module by said operating system;

a software of HCI communication device for controlling said HCI communication device;

10 a Bluetooth HCI software and a Bluetooth protocol stack satisfied with at least specification 1.0B; and

a module for supporting fast search, having a database consisted of Bluetooth addresses of nearby access points, and an automation means needed for fast search request/response.

15 10. The device as claimed in claim 9,

wherein said automation means performs selective fast search request and selective fast search response.

11. The device as claimed in claim 6,

20 wherein said HCI communication means includes an USB host interface of at least one port.

12. The device as claimed in claim 6,

wherein said HCI communication means includes an UART host

interface of at least one port.

13. The device as claimed in claim 6,

wherein said HCI communication means includes an Ethernet
5 interface of at least one port.

14. The device as claimed in claim 6,

wherein said first electrical means includes a chip selector, a data bus,
an address bus, and an interrupt means.

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15. The device as claimed in claim 6,

wherein said second electrical means includes USB cables with the
lengths of $0, \sqrt{2} \alpha / 2$ where α is the shortest neighbor distance in the case
that AP's are uniformly and squarely distributed.

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16. The device as claimed in claim 15,

wherein said second electrical means includes an USB hub means of
at least one port.

20 17. The device as claimed in claim 8,

wherein said HCI communication means includes an USB host
interface of at least one port.

18. The device as claimed in claim 8,

wherein said HCI communication means includes an UART host interface of at least one port.

19. The device as claimed in claim 8,

5 wherein said HCI communication means includes an Ethernet interface of at least one port.

20. The device as claimed in claim 8,

10 wherein said first electrical means includes a chip selector, a data bus, an address bus, and an interrupt means.

21. The device as claimed in claim 8,

15 wherein said second electrical means includes USB cables with the lengths of $0, \sqrt{2} \alpha / 2$ where α is the shortest neighbor distance in the case that access points are uniformly and squarely distributed.

22. The device as claimed in claim 21,

wherein said second electrical means includes an USB hub means of at least one port.

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